

Green Scene: BC Must Keep Watch on Run-of-River

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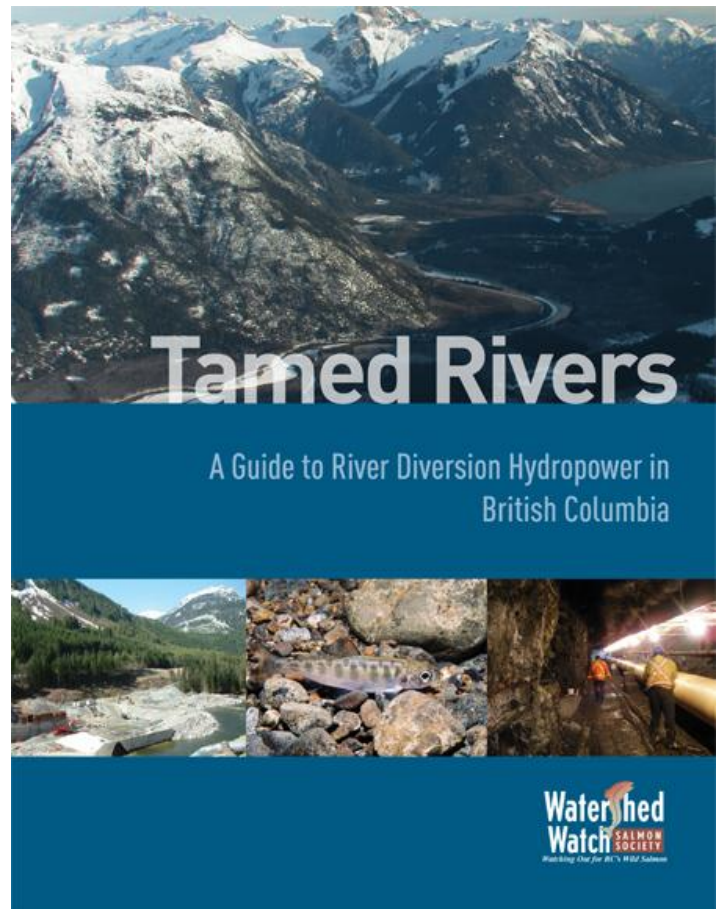
Several years ago, the Burke Mountain Naturalists joined with other groups to oppose a so-called run-of-river electricity project for most of the wild salmon streams in the Upper Pitt River Valley. Thankfully, the government of the day listened to our concerns and decided this proposal should not go forward. At that time, hundreds of rivers were being licensed for such diversions to generate electricity under the Campbell government's proposed Green Energy Plan for BC. We had a number of reasons to be concerned with the Upper Pitt project but, at the time, little was understood regarding the long term consequences of these so-called run-of-river projects. Now, the Coquitlam-based Watershed Watch Salmon Society of BC has released an excellent report, *Tamed Rivers, A Guide to River Diversion Hydropower in BC* (available at www.watershed-watch.org) which documents a number of negative impacts associated with such projects.

The first thing to understand about such projects is that they do divert rivers, often for several kilometers. This removes water from the stream and redirects it through pipes and turbines to generate electricity.

To have pronounced these projects "run-of-river" was a creative bit of industry advertising which masked their true impact. Because the amount of water diverted affects the profitability of the operation, there is considerable pressure to divert maximum amounts of water. Thus, although government guidelines suggested about 80% of the mean annual discharge of a river could be diverted without having huge impacts on fish habitat, the licenses granted by government typically allow diversion rates in the range of 95-99%.

Natural flows in rivers vary tremendously throughout the year.

Flow is generally greatest in the spring due to snow melt and in the fall during autumn rains. Flows diminish during the dry months of the summer. Diverted rivers typically have flows



reduced year-round to summer levels. The morphology, i.e., structure of a river is, in large part, determined by strong flushing flows in spring and fall which carry sediment and large organic woody debris downstream to create pools which provide critical fish habitat over the summer months. To dampen these strong flows by diversion will inevitably alter the morphology of a river over time. Initially, river diversion was typically only allowed upstream of areas used by ocean-migrating salmon albeit in habitat used by trout. However, a controversial power project approved this past spring on the Kokish River on Vancouver Island was within a stretch of the river used by ocean-migrating salmon.

There is an urgent need for more monitoring of the impacts on fish habitat. For example, there have been a number of examples where abrupt changes in flows led to stranding of fish or unreported accidents which caused a section of a stream to entirely dry up. Despite the evidence of dead fish, no fines have ever been levied. With reduced levels of staffing at both the provincial and federal government, it seems likely that monitoring will remain ineffective. The Watershed Watch report points out that detailed water use plans are required for all BC Hydro projects to reduce impacts on fish habitat. However, no such plans or public oversight are required for private power projects. All the information in their report on fish kills was obtained through Freedom of Information requests or was reported by observers who simply happened to be on the scene.

In addition to extensive impacts on aquatic habitat, there are also a number of impacts on the terrestrial environment from river diversion projects. These are mainly associated with the construction of roads and transmission lines in remote areas including in old-growth forests. Roads and transmissions lines can prevent the natural movements of wildlife such as mountain goats and grizzly bears. In coastal areas, transmission lines are a treacherous impediment to the flight of marbled murrelets, a species at risk, when they make daily flights between their nests in old growth forests and foraging areas on the ocean.

The Watershed Watch report also points out the need to understand cumulative impacts and calls for improved land use planning and information gathering. Finally, the report notes that energy conservation remains an overlooked option. With people in Great Britain and Germany using less than half the electricity that BC residents do, there would appear to be a huge potential for the implementation of energy conservation initiatives. Such projects, with no environmental impacts, would surely be the wisest place to look for ways to meet our future electricity needs in BC.